The Use of Energetic Means to Exploit Uranium's True Mode of Self-Heating to Enable Purification to 100% without Use of Centrifuges

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Introduction

Although it is generally believed that much of the heat produced by uranium is the result of nuclear decay, much of the measurable difference between the temperature of uranium and surrounding materials is actually the result of the tendency of uranium to retain heat. This heat retention has little to do with its density, but instead has to do with an unacknowledged form of cooling previously laid out by this author (ibid.)

Abstract

Taking this factor into account and considering the possibility that bestowing uranium with even a mildly negative charge would only result in a further increase in the pendulum-like thermal amplification effect involving the negatively charged electron cloud of uranium attracting the highly positive nucleus (which due to its large size, also comes closer to the electron cloud than do the nuclei of lighter elements.)

In addition to the cationization of uranium, magnetic fields may be used to increase the maximal carrying capacity of uranium atoms with regard to electrons. If we add to this the ingredient of active cooling of the raw ore, a situation can be created in which uranium may be made to become molten whilst surrounding raw ore remains solid.

If this can be achieved, it should be possible to obtain uranium in its purest form using nothing but raw ore without centrifuges by simply allowing the molten uranium to "seep" through the raw ore and for it to be collected in a basin below.

Not only would this method be more rapid, it would be more cost effective and would enable uranium to be purified in a single step rather than requiring a gradual ramping up to 20% enrichment following by additional gradated steps. So long as ore is chilled and exposed to a powerful magnetic field prior to electrification, moltenized uranium ought to remain high in purity.

Although the recently published method describing the use of CFLs to render materials as molten (such as ore of any sort) at room temperature, that particular approach, in addition to requiring the use of centrifuges in the process, may not be available to poorer nations and is less suitable for the application of uranium enrichment than is the aforementioned approach, which causes uranium to self-heat disproportionately in comparison to the surrounding

earthen material and enables a high degree of enrichment without the use of centrifuges.

Conclusion

Uranium may be used for many peaceful purposes including nuclear electrical generation. A novel refinement method would make nuclear energy available to a wider variety of nations, including Australia, which is currently experiencing record electrical prices.